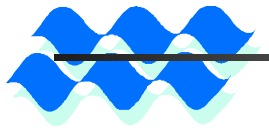
Development of an Ammonia Criteria Implementation Tool - WERF Targeted Collaborative Research Initiative



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Rationale

- August 2013 - New aquatic life AWQC for ammonia were published reflecting latest scientific knowledge
- New criteria are numerically lower than previous criteria
- Implementation of the new criteria is expected to be costly
- Regulators and the regulated community need “hard” data and information regarding compliance options for sound and responsible decision-making

Comparison of past vs new ALC

Criterion Duration	1999 Criteria	2013 Criteria
Acute (1-hr average)	24	17
Chronic (30-d rolling average)	4.5*	1.9*
*Not to exceed 2.5 times CCC as a 4-day average within the 30-days, more than once in three years on average.		
Criteria frequency: Not to be exceeded more than once in three years on average		

Objective

- Create a criteria implementation support tool containing information for states/municipal dischargers to consider and evaluate prior to adopting and applying any of the flexibilities authorized under the CWA for WQS implementation

- Make tool available via an internet-accessible platform

WERF Targeted Collaborative Research

- Efforts that are initiated by a WERF subscriber or a group of subscribers that have a common goal or need - in this case, a methodology or tool that will facilitate cost-effective implementation of the ammonia criteria.
- Other WERF and non-WERF subscribers can join in a collaborative effort, e.g., US EPA, NACWA, Missouri DNR.
- Collaborators raise the funds necessary to conduct the research and develop a product (tool).
- Cost of research is spread across all interested parties, making it relatively more affordable for each entity.
- WERF helps organize and promote the effort, as well as manages the actual research.

Why is an implementation tool necessary for ammonia?

- Meeting new ammonia permit limits could be very costly for some WWTPs
- A number of non-engineering compliance flexibilities are authorized under the CWA for WQS implementation, but some of these are poorly understood or under-developed
- Both the regulators and the regulated community need to understand the new criteria, associated ramifications, and all the options available to comply with the criteria prior to adoption in state WQS

Flexibilities authorized under the CWA for WQS implementation

- Recalculation Procedure for site-specific criteria derivation,
- Variances,
- Revisions to designated uses,
- Dilution allowances, and
- Compliance schedules

See “Flexibilities” document available at:

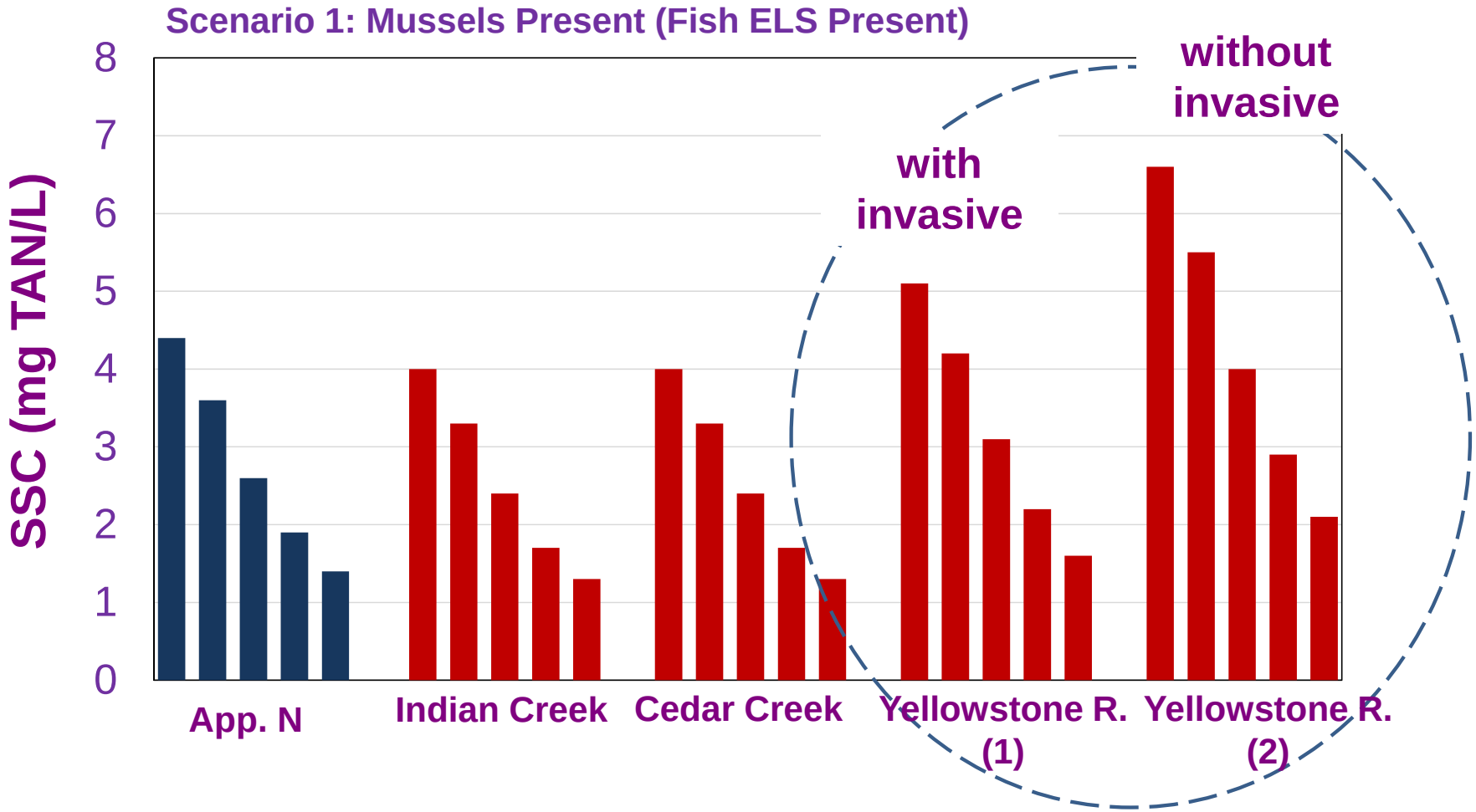
http://water.epa.gov/scitech/swguidance/standards/criteria/aqlife/ammonia/

EPA's New Deletion Process of the Recalculation Procedure

- Involves removing certain tested species from the sensitivity distribution (SD) based upon taxonomic relatedness, and where nonresident tested species are deleted if and only if they are not appropriate surrogates of resident untested species.
- Allows user's to edit the taxonomic composition of the toxicity dataset used to construct a new SD upon which a site-specific aquatic life water quality criterion can be based, in order to better represent the assemblage that resides at the site.
- **Important**: What once was broken has now been fixed – via the new (2013) Deletion Process

See Poster Presentations given at Annual SETAC NA Conference in Nashville, TN, November 2013 - provided as separate attachments.

Use of new Deletion Process to Derive SSC for Ammonia



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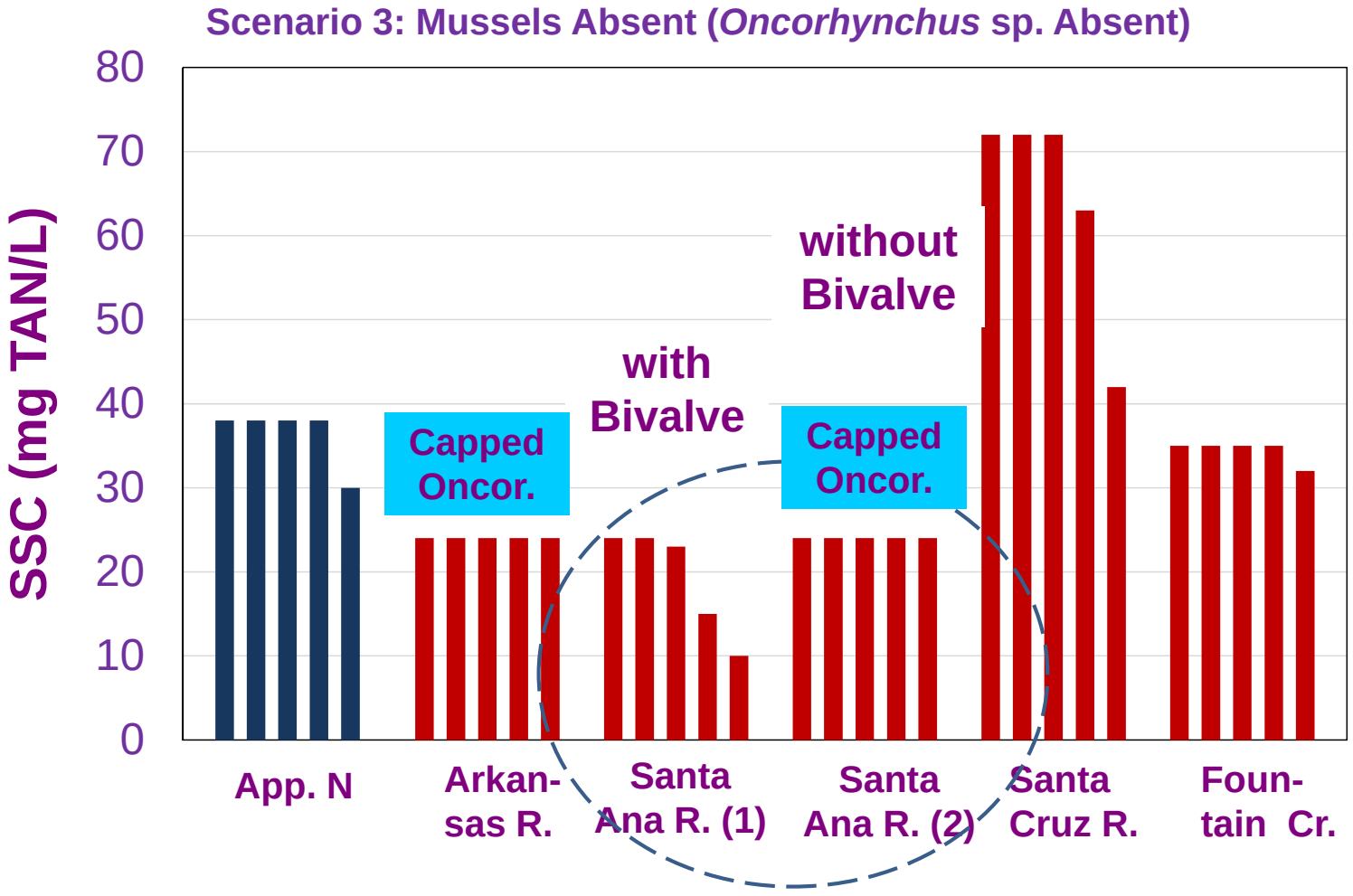

Variances

- States given authority to grant variances from criteria, based on proof of substantial & widespread economic harm that would result from immediate implementation of the standards
- Can be general (statewide) or individual
- Recent examples of statewide variances:
  - Mercury (Ohio)
  - Nutrients (Montana)

Key Considerations Regarding Variances for Ammonia

- Wastewater treatment technology used by WWTP – some likely will not meet new limits, e.g., see Missouri DNR Fact Sheet at: http://www.dnr.mo.gov/env/wpp/cwc/010814-tab9.pdf
- Population decline and decrease in tax revenues for water infrastructure improvement
- Existing provision within state WQS to allow variances

Why a TRC to Develop and Criteria Implementation Tool for Ammonia?

- Some states are being proactive, others are waiting for information
- Information could allay fears and dispel myths – for both sides
- Knowledge provides power to improve